

JetID recommendations

Approach:

Goal: high JetID efficiency and low fake rate

Assumption: Fake jets come from precision read out

Recommend using L1 trigger towers
for offline jet identification

L1 confirmation efficiency is about 99%
(98% in the ICD)

Total Jet ID efficiency $97.4 \pm 0.5\%$

Fake jet survival efficiency is 10-20%

Good jets sample: dijet events

back to back

Fake jets sample: multijet events and jets
with no track matches

Samples selected with different triggers
t42 algorithm reduces fake rate even more

Efficiency is flat in jet p_T and η

Suggested ID criteria :

$$0.05 < \text{EMF} < 0.95, \quad \text{HTOF} < 10.$$

$$\text{CHF} < 0.4, \quad n_{90} > 1$$

$$\begin{aligned} \text{L1/uncorrected jet } p_T \cdot (1 - \text{chf}) &> 0.4 \text{ (CC,EC)} \\ &> 0.2 \text{ (ICD)} \end{aligned}$$

Issues:

- Low L1 confirmation efficiency for P13 TMBs due to low number of L1 towers kept in the p13 TMBs. It should not be the problem for DST reprocessing (needs to be confirmed).
- No available tuning of L1 confirmation for MC.

